NuMI PMG Meeting
Tuesday, May 13, 2003
10:30 - 12:00, 1-North

AGENDA

1. Project Update - Bock (15 min.)

- Preparations for May DOE Review
- Responses to April Directors Review Recommendations

2. Construction Status - Bogert (15 min.)

3. Technical Components - Grossman (20 min.)

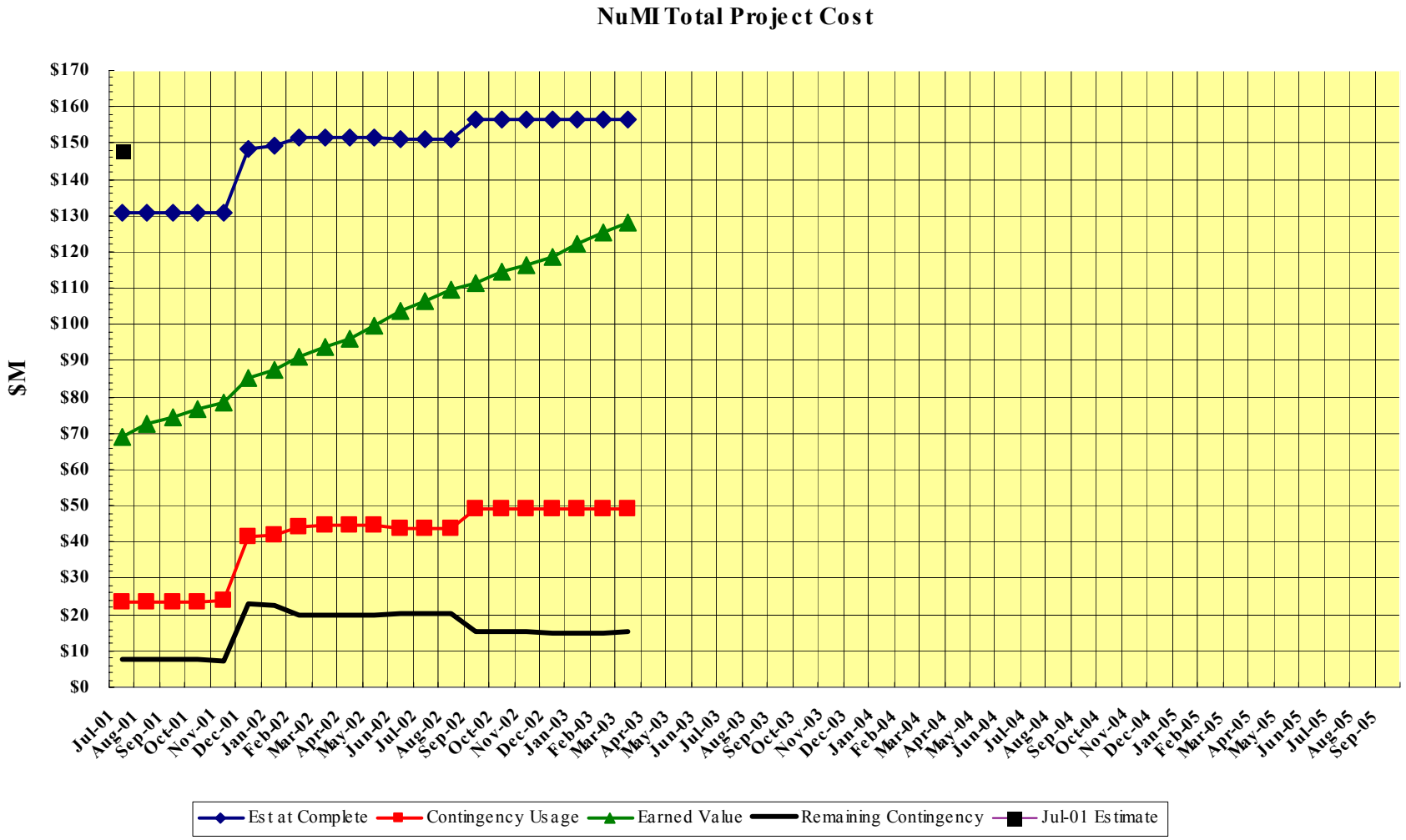
- Including status of shielding assessment and SAD prep.

4. MINOS Report - Rameika (15 min.)

NuMI Financial Status

WBS	Amount Authorized	Estimated Cost	ETC (BAC - BCWP)	% Complete	Obligated $	Obligated %	Contingency $	Contingency %
As of September 30, 2002								
TEC	109,242	97,457	35,402	64%	70,123	72%	11,785	33%
1.1		26,160	14,419	45%	13,368	51%		
1.2		66,867	19,353	71%	54,543	82%		
1.3		4,430	1,630	63%	2,213	50%		
OPC	62,200	58,801	9,288	84%	49,858	85%	3,399	37%
2.0		42,583	9,259	78%	34,044	80%		
3.0		16,218	29	100%	15,814	98%		
TPC	171,442	156,258	44,690	71%	119,982	77%	15,184	34%
As of March 31, 2003								
TEC	109,242	97,708	23,753	76%	88,117	90%	11,534	49%
1.1		26,219	11,599	56%	19,057	73%		
1.2		67,059	10,843	84%	66,658	99%		
1.3		4,430	1,310	70%	2,402	54%		
OPC	62,200	58,572	4,648	92%	55,177	94%	3,628	78%
2.0		42,195	4,518	89%	39,034	93%		
3.0		16,377	130	99%	16,142	99%		
TPC	171,442	156,280	28,401	82%	143,293	92%	15,162	53%

NuMI Project Status



March Variances

Variance Summary Table			(Cumulative to Date as of 3/31/03)		
	Budgeted Cost		Actual Cost	Variance	
WBS / Description	Work Scheduled	Work Performed	Work Performed	Schedule	Cost
1.1 Technical Components	13,538	14,619	15,086	1,081	(466)
1.2 Facility Construction	58,018	56,216	56,207	(1,802)	9
1.3 Project Management	3,119	3,119	2,402	0	717
1.0 TEC Total	74,676	73,955	73,695	(721)	260
2.1 Magnets: Steel & Coils	7,051	7,433	7,413	382	19
2.2 Scintillator Detector Fabrication	19,522	19,481	19,224	(41)	256
2.3 Electronics, DAQ & Database	8,603	8,398	7,318	(205)	1,080
2.4 Far Detector Installation	4,832	4,624	3,632	(208)	993
2.5 Near Detector Installation	1,205	1,060	1,015	(146)	45
2.6 MINOS Project Management	1,415	1,415	1,469	0	(54)
UK In-Kind Contribution	(4,767)	(4,734)	(4,734)	33	0
2.0 MINOS Detector	37,861	37,677	35,337	(185)	2,339
3.1. NuMI Conceptual Design	1,933	1,933	1,928	0	5
3.2 MINOS Detector R&D	1,780	1,780	1,768	(0)	12
3.3 MINOS Cavern	14,527	14,527	14,527	0	0
3.4 Soudan/MINOS Operating	1,765	1,766	1,452	1	313
Minnesota Preconstruction Funds	(758)	(758)	(758)	0	0
Minnesota Contruction Funds FY99	(3,000)	(3,000)	(3,000)	0	0
3.0 NuMI Project Support	16,246	16,247	15,917	1	330
OPC Total	54,108	53,924	51,254	(184)	2,669
TPC Total	128,784	127,879	124,949	(905)	2,929

Labor overruns on kicker PS and Joint design. About $80K is not real. Positive schedule variance is even better than it appears

Schedule variance on RBI work corresponding to 23 days. Management assessment is 10 days.

No real large net variances in WBS 2 or WBS 3. Final invoicing expected in a few areas over the next few months.

Doe Milestones FY2002-2005

Milestone Description	PEP Milestone #	DOE Milestones	Current Month's Forecast Milestone (3/2003)	DOE Milestone Variance (Cal Days)	Notes
Cosmic Rays Observed in Far Detector	L-2-10	3/22/2002	8/31/2001	203	Complete
Technology Choice Made for Muon Monitors	L-2-16	5/30/2002	12/10/2001	171	Complete
Service Building & Outfitting Bid Package Out	L-1-10	7/30/2002	2/25/2002	155	Complete
75% Scintillator Produced	L-2-19	8/30/2002	5/24/2002	98	Complete
Near Detector Hall Excavation Complete	L-2-7	12/30/2002	8/30/2002	122	Complete
Target Hall Excavation Complete	L-1-5	12/30/2002	10/4/2002	87	Complete
Lambertson & C-Magnets Assembled & Tested	L-2-12	2/1/2003	10/31/2002	93	Complete
First Far Detector Super Mod Complete & Tested	L-1-7	3/15/2003	7/24/2002	234	Complete
Inner & Outer Conductors for First Production Horn Assembled	L-1-6	4/14/2003	2/5/2003	68	Complete
Target Service Building Shell Complete	L-2-18	9/30/2003	7/7/2003	85	
Near Plane Pre-assembly Complete	L-2-20	10/10/2003	12/17/2002	297	Complete
Far Detector Complete & Tested	L-1-8	4/25/2004	9/10/2003	228	
Beneficial Occupancy of Service Buildings at Fermilab	L-2-11	5/31/2004	12/22/2003	161	
Start Commissioning with Both Near and Far DAQ	L-2-21	8/30/2004	4/1/2004	151	
Complete Installation of Horn Power Supply	L-2-17	9/1/2004	10/6/2003	331	
MI Stub Installation Complete	L-2-15	3/11/2005	8/16/2004	207	
Near Detector Complete & Tested	L-2-14	3/31/2005	11/4/2004	147	
First Horn Installed	L-2-13	4/7/2005	6/2/2004	309	
Start Commissioning	L-1-9	9/1/2005	12/6/2004	269	
CD-4 Start Operations	L-0-3	9/30/2005	1/14/2005	259	End of Commissioning

Beam in 19 months

Organization Changes

- WBS 1.1.4 Decay Pipe and Absorber:
  Cat James joins Bob Bernstein as L3 Manager
- Alan Wehman, Jorge Morfin and Debbie Harris undertaking documentation coordination projects as we prepare for commissioning and ultimately hand-off for operations

Change Requests

- 2 CR's today:
  - WBS 1.2 (includes Water Handling Phase I and some forgotten cable scope) $312K
  - WBS1.1 (Final set of L3 Milestones)
- Contingency use consistent with the prediction made to DOE review committee in December: Significantly lower contingency consumption than any 6 mos period since the re-baselining. We WILL use more in the next 6 mos
- List some possible future CR's
  - More SBO
  - Some 1.1 Variances
  - Perhaps some specific Healy Settlements

Change Requests Since Sept 2002

CR #	WBS	Description	Amount	Reported
180	1.1	Add Shield Door to WBS 1.1.8 Scope	86,357.58	Feb-03
206	1.1	WBS 1.1.3 Reschedule Selected Activities	0.00	Oct-02
209	1.1	Conventional Power Supply Regulation	151,172.06	Dec-02
212	1.1	Adjust WBS 1.1 Activities	(117.16)	Jan-03
215	1.1	Reschedule WBS 1.1 Activities	(26,608.17)	Feb-03
220	1.1	Increase Magnet Refurbishment Budget	98,823.74	Feb-03
222	1.1	Add Heliax Cables to 1.1.8 Scope	51,680.98	Feb-03
225	1.1	Remove Spare Scope & Decrease Cost Overruns	(352,763.73)	Mar-03
		Subtotal 1.1	**8,545.29**	
204	1.2	NuMI Construction Title III Adjustments	10.01	Oct-02
205	1.2	Transfer Water Treatment to Correct WBS	(0.00)	Oct-02
207	1.2	Monthly Healy CR	0.00	Oct-02
211	1.2	Revise RBI Estimate for Post Award Adjustments	29,999.88	Feb-03
213	1.2	Ragner-Benson Schedule	85.08	Jan-03
214	1.2	Ragnar-Benson Schedule	(28,189.54)	Jan-03
219	1.2	Increase Healy Budget	212,072.78	Feb-03
		Subtotal 1.2	**213,978.21**	
		SUBTOTAL TEC	**222,523.51**	
217	2.2	Revise WBS 2.2 Budgets	(591,803.42)	Feb-03
218	2.3	Revise WBS 2.3 Cost Estimate	579,557.97	Feb-03
223	2.3	Reschedule WBS 2.3	25,144.80	Mar-03
216	2.5	Revise WBS 2.5 Schedule & Budget	(571,929.75)	Feb-03
226	2.5	Retire Negative Cost Variances	199,276.36	Mar-03
		Subtotal 2.0	**(359,754.04)**	
221	3.4	Add FY03 Budget for WBS 3.4.1	159,000.26	Feb-03
		Subtotal 3.0	**159,000.26**	
		SUBTOTAL OPC	**(200,753.79)**	
		SUBTOTAL TPC	**21,769.72**	

Department of Energy
Review of the NuMI Project
May 28-30, 2003
CHARGE to the COMMITTEE

This is the eleventh Department of Energy (DOE) review of the Neutrinos at the Main Injector (NuMI) project. The review, which is being requested by the Acting Director of the DOE Division of High Energy Physics (DHEP), will consider the technical, cost, schedule, and management aspects of the project. The last review was held in December 2002.

A written report on the review is due to the Acting DHEP Director by June 30, 2003. The review committee is asked to address in the report the following specific points.

1. Assess the project's response to the comments and recommendations of the last review committee.
2. For each work-breakdown-structure level 3 element of the NuMI facility, and level 2 element of the MINOS detector:
(a) Assess the progress made since the last review, and the status of the DOE and project milestones.
(b) Identify any changes made to the project baseline (technical, cost, and schedule) since the last review, and discuss their impact.
(c) Comment on the activities planned for the next six months, and identify areas for special attention in the future.
3. Evaluate Fermilab's management of the project's construction subcontracts.
4. Assess the project's detailed plan for installation of technical components and the near detector in the NuMI facility. Interfaces with other Fermilab activities, clarity of roles and responsibilities, and availability of resources should be considered.
5. Comment on the status of the Laboratory's preparations for commissioning the NuMI beam, including CD-4 and the subsequent evolution to higher operational intensities.

Department of Energy Review
of the
Neutrinos at the Main Injector (NuMI) Project
May 28-30, 2003
REVIEW COMMITTEE PARTICIPANTS

Department of Energy

Daniel Lehman, DOE/SC, Chair
Philip Debenham, DOE/SC, Executive Secretary
Ronald Lutha, DOE/Fermi Group
Stephen Tkaczyk, DOE/SC

Consultants

Roy Cutler, ORNL
Gene DeSaulnier, Consultant
Steve Kettel, BNL
Lowell Klaisner, SLAC
Frank Kornegay, ORNL
Marc Ross, SLAC
William Sproule, Consultant

Observers

Jane Monhart, DOE/Fermi Group

Department of Energy Review
of the
Neutrinos at the Main Injector (NuMI) Project
May 28-30, 2003
DRAFT AGENDA

Wednesday, May 28, 2003—Comitium

8:00 am DOE Executive Session ..... D. Lehman
9:00 am Opening Remarks.....M. Witherell
9:15 am Project Overview.....G. Bock
(management and recommendations from previous reviews)
10:00 am Break
10:15 am Neutrino Beam Overview (WBS 1.1) .....B. Baller
Summary cost, schedule, past 6 months progress (including progress and next 6 months milestones), significant changes/decision, changes to technical design handbook, beam optics, and commissioning plan.
11:00 am Installation Plan
12:00 pm Working Lunch
1:00 pm Civil Construction (WBS 1.2).....D. Bogert
Summary cost, schedule, past 6 months progress (including progress as stated in Dec. 2002), and next 6 months objectives, significant changes/decisions, Tunnel and Halls, and Service Building and Outfitting
1:30 pm Tour (Construction Site, MI-8, and New Muon Lab)
2:30 pm MINOS Detector Status (WBS 2.0) ..... G. Rameika
Summary cost, schedule, past 6 months progress (including progress against Level 3 milestones), plans for Near Detector and electronics for Near Detector
3:00 pm Parallel Sessions
Technical Components, Civil Construction, MINOS, Commissioning, Installation, ES&H
5:00 pm DOE Executive Session
6:30 pm Adjourn

Thursday, May 29, 2003

8:30 am Parallel Sessions
Technical Components, Civil Construction, MINOS, Commissioning, Installation, ES&H
12:00 pm Lunch
1:00 pm Summary Presentations, Risk Analysis—Comitium.....G. Bock
2:00 pm DOE Subcommittee Sessions
3:00 pm DOE Executive Session

Friday, May 30, 2003—Comitium

8:30 am Subcommittee Working Sessions
10:00 am DOE Executive Session Dry Run
12:00 pm Lunch
2:00 pm Closeout Presentation with NuMI Management
3:00 pm Adjourn

Director's review of Installation

Executive Summary

Good progress has been and is being made on the Service Buildings and Outfitting contract. The September Beneficial Occupancy date for the MI-65 area and the December Beneficial Occupancy for the MINOS area will be met within a few months.

During the short 3 week January shutdown most planned work was accomplished. This was a good experience working with the Beams Division Operations Coordinator and Mechanical Support Department and in many respects can serve as a template for the next shutdowns.

Critical Floor Manager positions and many Task Manager positions have not been filled. Filling these positions as soon as possible was a recommendation of the December 2002 NuMI Installation Director's Review. This need exists even more strongly now. NuMI has set June 1 as a goal. This goal**,** or preferably sooner, is urged by the committee. MI-65 and MINOS FLOOR MGRS IDENTIFIED!!!

The availability of sufficient personnel to carry out the orderly, efficient, safe and timely execution of the NuMI underground installation work is critical to the success of the installation phase of the NuMI Project, and requires constant attention by the top management of the Laboratory (the Directorate, Beams Division and Particle Physics Division) and the NuMI Project, in close communication and coordination with one another.

Fermilab Management reaffirmed that NuMI is a Beams Division project. Thus, Beams Division is the landlord for the entire project through project completion.

A more vigorous and expanded implementation of the Beams Division NuMI ES&H oversight is required. DISCUSSIONS ADVANCING ON A MERGED BD/PPD COMMITTEE

Fermilab has committed and remains committed that the NuMI project will be completed on schedule.

The NuMI project needs to develop and document its project documentation system. REORGANIZED SOMEWHAT TO CREATE A FOCUSSED DOCUMENTATION EFFORT

Other Items

- PMP approved
- Changes to Accounting System and COBRA
- Moving toward a fully “Electronic” Monthly Report
- Upcoming PMG’s
  - Continued updates on Fermilab resources and shutdown plans
  - Progress on Planning for NuMI/MINOS Operations
    - Obstacles between today and 2.5E13 ppp
    - Budget Planning for FY05

In General….

- NuMI remains in very good shape as the following talks will indicate
  - SBO continuing to make good progress, a schedule variance that developed early in 2003 seems to be reversing. (over 40% done, one injuries to date)
  - Detector installation at Soudan going well, electronics progressing well here, MINOS budget good shape
  - Technical components—engineering, fabrication and installation going well